What is claimed is:

1. A lithium secondary battery formed by placing at least a positive electrode, a negative electrode, and a non-aqueous electrolyte in a battery case in which a positive electrode connecting member to which the positive electrode is connected and a negative electrode connecting member to which the negative electrode is connected are electrically separated,

wherein said positive electrode connecting member is composed of clad material comprising one of aluminum or aluminum alloy and one of austenitic stainless steel or ferrite stainless steel, and the aluminum or aluminum alloy in the clad material is on the positive electrode side.

2. The lithium secondary battery according to claim 1, wherein

the aluminum alloy in said clad material is aluminum-manganese alloy.

3. The lithium secondary battery according to claim 1, wherein

a nickel plating layer is formed on the austenitic stainless steel or the ferrite stainless steel in said clad material.

4. The lithium secondary battery according to claim 1, wherein

the austenitic stainless steel in said clad material is at least one type selected from a group consisting of SUS316L, SUS316, SUS304L, and SUS304.

5. The lithium secondary battery according to claim 1, wherein

the ferrite stainless steel in said clad material is at least one type selected from the group consisting of SUS430 and SUS434.

6. The lithium secondary battery according to claim 1, wherein

a positive electrode material in said positive electrode is at least one type selected from the group consisting of cobalt-lithium oxide, nickel-lithium oxide, and manganese-lithium oxide having spinel structure.

7. A lithium secondary battery provided with a positive electrode in which positive electrode material is adhered to a positive electrode current collector, a negative electrode, and a non-aqueous electrolyte, wherein

said positive electrode current collector consists of an aluminum alloy containing 0.1 to 10 wt % of manganese and has a space member.

8. The lithium secondary battery according to claim 7, wherein

said positive electrode current collector having the space member has one type of structure selected from a

group consisting of lath, and sintered member, foamed member, and aggregation of wire material which are having a filling space.

9. The lithium secondary battery according to claim 8, wherein

said positive electrode current collector has the structure of a flat metal lath.

10. The lithium secondary battery according to claim 7, wherein

an aluminum alloy used as said positive electrode current collector contains at least one type of element selected from the group consisting of copper, magnesium, and zinc in addition to said manganese.

11. The lithium secondary battery according to claim 7, wherein

the aluminum alloy used as said positive electrode current collector contains at least one type of element selected from the group consisting of copper, magnesium, and zinc in a range of 0.1 to 10 wt %.